Creating Overlays in Beamer

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One of Beamer's most powerful tools, it lets us overlay almost any element of a frame in many possible ways.

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One feature that is common in the most used slides presentation programs is the possibility to create overlays, that is, to add elements to the slide dynamically without changing it. Although you may be surprised, Beamer also offers this feature, and the way he does it is by

crating multiple slides from one single frame, where different elements of the frame appear sequentially.

In this lesson, we are going to see how to accomplish that, and we are going to understand the *overlay specifications*.

1. Frames vs Slides

In Beamer, a presentation consists of a series of frames. In turn, each frame can consist of a series of slides. In previous tutorials, you may have not seen a frame with multiple slides yet. In the output, every slide of the frame is a page of the PDF document; since until now every frame had only one slide, pages, frames and slides were all the same. From now on, we shall distinguish between frames and slides.

2. The **\pause** command

Let's get our hands on Beamer and create the simplest frame with multiple slides. The **\pause** offers the easiest way to do this, although it may not be the most flexible.

> If you put \pause at a given point in the frame, the first slide contains all the elements until this first appearance. Then the following slide will contain all the elements until the second appearance of \pause, and so on until the last appearance, where the remaining elements of the frame are shown in the last slide.

The following code is an example about using \pause command inside itemize environment:

```
1.   % Overlays in beamer (pause command)
2.   \documentclass{beamer}
3.
4.   % Theme choice:
5.   \usetheme{Frankfurt}
6.
7.   \begin{document}
```

```
 8.
 9.    \begin{frame}{Creating Overlays in Beamer}{Pause command}
10.
11.    \begin{itemize}
12.        \item Shown from the first slide on.
13.    \pause
14.        \item Shown from the second slide on.
15.    \pause
16.        \item Shown from the third slide on.
17.    \end{itemize}
18.
19.    \end{frame}
20.
21.    \end{document}
```

Compiling this code creates three slides as follows:

Creating Overlays in Beamer
Pause command

• Shown from the first slide on.

Creating Overlays in Beamer
Pause command

- Shown from the first slide on.
- Shown from the second slide on.

Creating Overlays in Beamer
Pause command

- Shown from the first slide on.
- Shown from the second slide on.
- Shown from the third slide on.

Although **\pause** may seem very useful, we are going to see some other commands that fine tune the overlay behavior. But first, let's understand the core concept of overlay specifications.

3. Overlay specifications for text formatting commands

Overlay specifications indicate to certain command on which slides it should act. The basic syntax is in the following form:

\command<overlay spec>[options]{}

`overlay spec` is a list of numbers, with comma-separated, or ranges, with dash-separated. For example, the range 3-6 means the same as the list 3,4,5,6. The start or the end of a range can be omitted; in that case, it means from the start of the frame and until the end of the frame, respectively.

For most commands, the overlay specification causes the command to simply be ignored on slides that are outside the specification. The text formatting commands are:

\textbf, \textit, \textmd, \textnormal, \textrm, \textsc, \textsf, \textsl, \texttt, \textup, \emph, \color, \textcolor, \alert, \structure

Check the following example:

```
1.    % Overlay specifications
2.    \documentclass{beamer}
3.
4.    % Theme choice:
5.    \usetheme{Frankfurt}
6.
7.    \begin{document}
```

Copy

```
 8.
 9.    \begin{frame}{Overlay specifications}
10.
11.    \textit<1>{
12.        This will be italized text only on the first slide.}
13.    \textbf<2-4>{
14.        This will be bold text from the second slide to the fourth.}
15.    \texttt<5->{
16.        This will be typewriter text from the fifth slide on.}
17.
18.    \end{frame}
19.    \end{document}
```

Compiling this code creates 5 slides as shown below:

0:00 / 0:05

Outside the specified slides, the given sentences are in usual roman font.

? Now think about which slides would affect the overlay specification <2-4,6,8,11->.

It would affect slides 2,3,4,6,8,11 and the ones that come after the 11th.

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